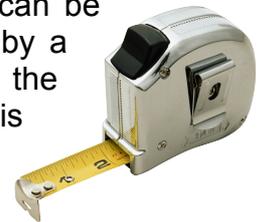# Intelligent Cloud Service Benchmarking Tool

Diploma/Master Thesis

Cloud Computing has become a major trend for Web applications since Cloud technologies offer benefits such as elasticity and pay-per-use billing. Over time many Cloud provider have entered the stage offering services to run a Web application in the Cloud. Choosing a Cloud provider is complex and requires to consider multiple factors, such as service costs, service levels, switching costs or technological requirements.

One important factor is the performance of a Cloud service. Performance can be measured on a technical basis and its economical importance is reflected by a metric that contrasts performance to costs [1]. However, measuring the performance attributes of all existing Cloud providers and all offered services is very costly and time consuming. An advanced approach that can reduce the effort tremendously has been introduced by Haak and Menzel [2]. The complexity of the approach is high what makes it practically unusable for manual application.

Therefore, an automated and extensible benchmarking tool must implement the approach. The tool must support the measurement of Cloud service performances on multiple metrics and for different service types, and employ the stopping theory to reduce the overall cost and time effort.

Goals within your thesis

- Develop an automated, extensible phoronix-like [3] benchmarking tool that supports multiple providers and service types
- Implement the approach presented by Haak & Menzel [2] in your tool
- Integrate your benchmarking tool with Aotearoa [4] and define an interface for the tool

References

[1] Alexander Lenk, Michael Menzel, Johannes Lipsky, Philipp Offermann, Stefan Tai. "What are you paying for? Performance benchmarking for Infrastructure-as-a-Service offerings". Proceedings of the 4th IEEE International Conference on Cloud Computing (CLOUD 2011), Washington, D.C., July, 2011.
[2] Steffen Haak, Michael Menzel. "Autonomic Benchmarking for Cloud Infrastructures – An Economic Optimization Model". Proceedings of the 1st IEEE/ACM Workshop on Autonomic Computing for Economics, in print, Karlsruhe, June, 2011.
[3] http://www.phoronix-test-suite.com
[4] http://code.google.com/p/aotearoadecisions

Phoronix Test Suite

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